

REMARKS

Reconsideration and allowance of the subject application is respectfully requested. By this Amendment, Applicant has add new claims 31-67. Thus, claims 1-67 are now pending in the application. In response to the Office Action (Paper No. 5), Applicant respectfully submits that the pending claims define patentable subject matter.

I. Preliminary Matters

As a preliminary matter, Applicant thanks the Examiner for acknowledging that claims 13-16 contain allowable subject matter (or would be allowable if rewritten). However, Applicant respectfully requests the Examiner to hold in abeyance the rewriting of these claims until the Examiner has had the opportunity to reconsider the rejected parent claims in light of the arguments presented below in support of the Applicant's traverse of the rejection.

II. The Present Invention

The present invention relates to a multi-media system for transferring a transport stream (MPEG2-TS) between a receiver and a recording/reproducing device using an IEEE 1394 interface. As shown in Figure 2, a high-definition digital video cassette recorder (HD-VCR) 200 and an advanced television (ATV 100) are connected by an IEEE 1394 cable 300. In addition, other digital audio/video devices (not shown) may be connected to the ATV 100 and/or the HD-VCR 200 by the IEEE 1394 cable 300. A remote controller 120 is utilized for entering commands which are provided to the ATV 100. During a recording mode, a multi-program MPEG2 transfer stream (MPEG2-TS) is transferred from the ATV 100 to the HD-VCR 200. During a playback mode, a single program MPEG2-TS is transferred from the HD-VCR 200 to

the ATV 100. Audio and video data are transferred in real time using the isochronous transfer mode, and transactions required for communication between the ATV 100 and the HD-VCR 200, including read, write and lock, are transferred in an asynchronous pattern using the asynchronous transfer mode. Further, control commands of an Audio/Video Control and Transaction Set (AV/C CTS) are transferred in an asynchronous pattern using the asynchronous transfer mode.

In operation, one or more program numbers provided by the ATV-remote controller 120 are transferred as a command during the IEEE 1394 asynchronous transfer mode, and the program number recorded on a tape is transferred from the HD-VCR 200 to the ATV 100 during the playback of the MPEG2-TS, such that the HD-VCR 200 is controlled by the ATV 100. To achieve this, a new command for transferring a program number is added to the AV/C CTS, and the new command is transferred from the ATV 100 and the HD-VCR 200 using the asynchronous transfer mode. In particular, a user selects a program number for to be recorded by the HD-VCR 200 by entering the program number via the ATV-remote controller 120.

The command for transferring a program number is implemented using the IEEE 1394 read and write transactions, wherein the write and read transactions are performed in a transaction layer which is implemented by software in a ATV microcomputer 106, as shown in Figure 3. A link layer 110 adds an asynchronous header to a program number command in order to transfer the program number command as an asynchronous packet from the ATV microcomputer 106 according to the AV/C CTS specification, and converts the command having the asynchronous header into serial data. A physical layer 111 then converts the serial data into an electrical signal to be provided via the IEEE 1394 cable 300.

In the HD-VCR, a physical layer 201 converts the received electrical signal into digital data and a link layer 202 converts the digital data into parallel data of a 1-byte unit, removes the asynchronous header, and then outputs the result to a HD-VCR microcomputer 203. The HD-VCR microcomputer 203 recognizes the program number command and writes the program number in a VAUX region of the tape during a recording mode, and it reads out the program number recorded in the VAUX region during a playback mode to transfer the program number to the ATV 100 via the digital interface of the HD-VCR.

III. Rejection of claims 1-3, 6-8, 10-12, 22, 23, 25-27 and 30 under 35 U.S.C. § 102(e) as being anticipated by Yanagihara et al.

A. Disclosure of Yanagihara et al.

Yanagihara et al. (Yanagihara) discloses digital signal processor which receives and decodes digital broadcasts and a recording device which records and reproduces MPEG video and audio signals. When data is output from a digital interface of the digital signal processor to an external digital video recording device (DVCR), only the Packet Identification (PID) specifying a Program Map Table (PMT) corresponding to a program number selected from the Program Association Table (PAT) is sent to the DVCR and the remaining data are eliminated. Therefore, only the PID specifying the PMT for a program number currently being input is written on the PAT in the data output to the external DVCR. The MPEG video data and MPEG audio data for the program currently being input can therefore be read by examining the PAT to search the PMT. The digital interface is based on the IEEE-1394 standard wherein the data is inserted into isochronous packets according to the IEEE-1394 standard before it is output by the digital interface. At the DVCR, the data is then extracted from the isochronous packets, error

correction coding is added in the recording system and, after the data is subjected to channel coding, it is recorded.

B. Analysis

Applicant respectfully submits the claimed invention is not anticipated by or rendered obvious in view of Yanagihara. In particular, Applicant submits that it is quite clear that Yanagihara does not teach or suggest a receiver for generating a control command for transferring a program number of an intended program in a multi-program MPEG transmission stream, and a recording/reproducing device for receiving the control command and recording/reproducing the intended program of a received transport stream corresponding to the program number, as recited in independent claims 1, 3, 22, 26 and 30. That is, Yanagihara merely discloses modifying the PSI of the transport stream, rather than generating a new control command. As discussed above, Yanagihara teaches that the PSI is modified by altering the PAT to include only the PID specified by the PMT having a selected program number. The audio data, video data and PSI are inserted into isochronous packets according to the IEEE-1394 standard and transmitted to the DVCR where the audio data, video data and PSI are all recorded. On the other hand, the present invention is directed to adding a new command to the AV/C CTS for transferring a program number to recording/reproducing using the asynchronous transfer mode of the IEEE-1394 standard.

Accordingly, independent claims 1, 3, 22, 26 and 30, as well as dependent claims 6-8, 10-12, 23, 25 and 27, should be allowable because Yanagihara does not teach or suggest all of the features of the claims.

IV. Rejection of claims 2, 4, 5 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yanagihara et al. in view of Coutts et al.

A. Disclosure of Coutts et al.

Coutts et al. (Coutts) discloses a tape control system for positioning a tape utilizing time codes and VCR performance data. A remote control module is utilized to enter commands which are converted into infrared or electrical command signals and transmitted to an intended VCR.

B. Analysis

The Examiner maintains that Yanagihara discloses all of the features of dependent claims 2, 4, 5 and 9 except for a remote controller for entering one or more program numbers of intended programs, which the Examiner asserts is taught by Coutts. As discussed above, Yanagihara does not teach or suggest a receiver for generating a control command for transferring a program number of an intended program in an multi-program MPEG transmission stream, and recording/reproducing device for receiving the control command and recording/reproducing the intended program of a received transport stream corresponding to the program number, as recited in independent claims 1 and 3. Similarly, Coutts fails to overcome this deficiency of Yanagihara. Rather, Coutts is directed to a system for controlling a VCR tape position. This reference is not directed to a system which allows a user to input a program number of an intended program which is transferred from a receiver to a recording/reproducing device via a control command, as recited in independent claims 1 and 3. Thus, combining Yanagihara and Coutts would still fail to teach the claimed invention, according to independent claims 1 and 3. Accordingly, dependent claims 2, 4, 5 and 9 should be allowable at least by virtue of their dependency upon claims 1 and 3.

V. Rejection of claims 17-21, 24, 28 and 29 under 35 U.S.C. § 103(a) as being unpatentable over Yanagihara et al. in view of Lett et al.

A. Disclosure of Lett et al.

Lett et al. (Lett) discloses a method and an apparatus for controlling and communicating with peripheral auxiliary devices from a subscriber terminal. In a preferred implementation, the auxiliary device to be controlled is a peripheral controller which can tune a VCR, and switch it on and off. Several transactions in a communications and data protocol are used to effect the operation where a control VCR command and reply transaction cause the control of the tuning and recording of the VCR. A set-up VCR command and a brand reply transaction is used to provide information to configure the controller with brands and model of the VCRs. A program event code command and a program event timer reply transaction provide for the automatic recording of a program event based on an event code listed in a television schedule. A channel map command and a reply transaction provide for the downloading of the local cable system channel line up into the controller.

B. Analysis

The Examiner maintains that Yanagihara discloses all of the features of dependent claims 17-21, 24, 28 and 29 except for an on-screen graphic generator, which the Examiner asserts is taught by Lett. As discussed above, Yanagihara does not teach or suggest a receiver for generating a control command for transferring a program number of an intended program in an multi-program MPEG transmission stream, and recording/reproducing device for receiving the control command and recording/reproducing the intended program of a received transport stream

corresponding to the program number, as recited in independent claims 3, 22 and 26. Similarly, Lett fails to teach or suggest this feature of the claimed invention. Accordingly, claims 17-21, 24, 28 and 29 should be allowable at least by virtue of their dependency upon claims 3, 22 and 26.

VI. New Claims

By this Amendment, Applicant has add new claims 31-67 to further define the claimed invention. Applicant respectfully submits that new claims 31-67 should be allowable for the same reasons a claims 1-30 since the cited references do not teach or suggest a control command for transferring a program number.

VII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/939,442.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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